

CENWP-PM-E

Memorandum for: Portland District Operations Division

Date: June 24, 2009

Subject: Project Review Group (PRG) Technical Memorandum for the Sediment Characterization Report for the Federal Project Post Office Bar

Project Description

The Willamette River federal navigation channel (FNC) project is 11.6 ~~River #~~Miles (RM) long; from the confluence with the Columbia River (RM 0.0) to near the Broadway Bridge in Portland, Oregon. Congressional authorization is to a depth of 43-feet (-43-feet Columbia River Datum (CRD) (plus advanced maintenance) and a 600 to 1,900-ft. width, but it is currently maintained to a 40-ft. depth (plus 2-feet advanced maintenance), with an “as needed” width for users.

The proposed dredging is for sediment shoals within the FNC at approximate ~~river mile~~ (RM) 2.1-2.4, Post Office Bar. The proposed dredging prism (DP) varies from 4 to 7-feet deep, which includes 2-feet advanced and contains approximately 50,000 cubic yards (CY) of sandy-silt. The Corps will utilize a clamshell dredge to conduct the work. Environmental dredging best management practices ~~BMPs~~ will be utilized to minimize turbidity during dredging.

Commented [D1]: Such as?

Sampling Description: The sample area was split into 2 dredge material management units (DMMUs), with 12 discrete samples (over sampling due to high rank of surrounding area). Each of the 6 vibra-core samples were divided horizontally for a total of 12 discrete analyses; 3 analyses will represent each of the following: the dredging prism, the new surface material (NSM), the potential surface sloughing material and the potential at depth sloughing material (one-half depth of the dredging prism).

Testing Results and SL Exceedences: Of primary concern to the resource agencies (NMFS, ODEQ, and Ecology) were dichlorodiphenyltrichloroethane (DDT) and Polychlorinated Biphenyls (PCBs) contamination. These contaminants increased with depth and would result in higher levels in the NSM than in the dredge prism. Exceedences of PCBs were above the 2008 SLs and there was an increase of PCB concentrations from the dredge prism to the NSM [Total PCBs – Core No. 3: 56 ppb to 154 ppb; Core No. 5: ND to 79 ppb]. Increase in DDT from the dredge prism to the NSM [Total DDT – Core No. 3: 9.4 ppb to 14.5 ppb; Core No. 5: 8.4 ppb to 11.9 ppb]. Cd and Zn SLs were also exceeded and increased with depth in Core No. 3.

Disposal Description: The Corps will dispose of the dredged material at a confined, upland disposal facility; ~~there will be~~with no return water to the Willamette River.

Applicable Authorities Governing the Project: NEPA; Congressional authorization [to maintain a navigational depth of -43-feet CRD (plus advanced maintenance)]; Section 7 of the ESA; Section 305 of the MSA; Section 106 of the NHPA; et al.

Commented [D2]: What about authorities under the CWA?

Anticipated Incidental Fallback of Dredging Residuals: 3 to 4 inches, based on 5% fallback from bucket + residuals from upslope (represented by Core Nos. 2, 4, and 6).

Site-Specific Accretion Rate: 4 inches (10 cm)/ year, w/ peak accretion during the fall and winter months.

PRG Recommendations

1. Proceed with additional sampling to collect enough material for bioaccumulation studies (utilize micro-lipid methods per Inouye, if possible).

2. Analyze two composite samples of the dredge prism around Cores 3 and 5 ~~and analyze for the full suite of SEF CoCs~~ contaminants of concern. This testing would to better characterize the dredging residuals and spatial extent of contamination. Also analyze NSM per Inouye's recommendations in anticipation of bioaccumulation.

~~If the Corps in cooperation with EPA determines that dredging risk can be managed:~~

3. The Corps ~~needs to further~~ should coordinate with the EPA to determine approximately what the PCB cleanup level will be for the Lower Willamette R. It is not unreasonable to expect EPA to provide some guidance to its sister agency based on preliminary data. Based on coordination with EPA cleanup authorities, the Corps ~~needs to~~ should determine if the passive cap ~~over~~ would *likely* be below cleanup levels (<100 or ≥100 ppb). This would allow the Corps to ~~better~~ evaluate the risk associated with a passive cap. Based on the dredge prism maximum value (56 ppb total PCBs), it would be reasonable to assume that this is likely the maximum level of contamination that would ~~be deposited during result from~~ passive capping. This is also likely the maximum value in the dredging residuals as well (see No. 2, above).

4. In support of a decision to dredge, the Corps ~~needs should to~~ flesh-out their risk assessment (RA) for potential bioaccumulation pathways to strengthen ~~our~~ their conceptual site model (CSM) and ~~our~~ administrative record. The RA should contain the following elements:

a. A description of interagency coordination with EPA that demonstrates the Corps' commitment to protecting the aquatic environment and executing ~~our~~ their mission.

b. A determination of whether or not there are any benthic organisms in the current surface that would result in bioaccumulation to higher trophic levels (fish, birds, mammals, humans).

c. Identify the fish that would forage on benthic organisms in this area and determine which species would actually be caught and consumed.

d. Identify the duration of NSM exposure to the water column and how long the NSM will actually be a risk. The rate of ~~C~~ capping by dredged residuals and passive capping should be estimated.

Commented [D3]: I just don't understand the use of this sentence as a recommendation.

Commented [D4]: This sounds a little snarky to me.

e. ~~To support the RA, d~~Develop a WQ monitoring plan which measures parameters consistent with ODEQ requirements (turbidity ~~&~~-contaminant release, ~~others?~~)

Commented [D5]: We already know this is going to be in support of the RA.

f. ~~In support of the RA, d~~Develop an aggressive post-dredge monitoring plan that measures contaminant levels in the new surface directly after dredging, and every 3 months thereafter until testing indicates that the dredged area is the same as, or better than the initially characterized dredge prism.

g. Additionally, the Corps should conduct pre-dredge sampling both upstream and downstream to determine baseline conditions prior to dredging. Downstream samples should be taken in shoaling areas located down-current of the dredge site. Upstream samples should be taken from those areas most likely to in-fill the dredged area. The upslope samples characterized by the Corps should cover the effects of side slope sloughing, but the Corps may want to take additional samples beyond the characterized area in case additional shoreward material sloughs into or adjacent to the dredge area.

h. Determine what ~~other~~ factors would compromise the integrity of the passive cap (e.g., prop wash), and ~~are there the~~ navigational restrictions that could be placed over the first 1 to 2 years of operation to ensure that the NSM is not re-exposed.

i. Postpone dredging until ~~towards~~ the end of the ODFW-recommended in-water work period (~~after beginning of~~ October). In addition to capping by the dredging residuals, NSM exposure would be limited, since the accretion rates would be higher during the fall and winter months.

Commented [D6]: Why would you postpone work until the end of the in-water work window?

j. Develop a contingency plan for capping should it be determined that dredging residuals and passive capping will not address contamination issues. Capping with heavier material such as gravel or capping at a deeper depth ~~to reduce scour could will~~ provide some protection ~~by minimizing the concentration of contaminants against scour from prop wash.~~ The cap could be 9 – 12 inches.

~~If the corps in cooperation with EPA determines that risk cannot be managed:
5. Proceed with bioaccumulation studies.~~

Commented [D7]: Isn't this redundant with number 1??

The PRG members that reviewed the project were: James McMillan, U.S. Army Corps of Engineers; Genet Belete, Oregon Department of Environmental Quality, Dan Gambetta, National Marine Fisheries Service, Laura Inouye, Washington Department of Ecology and Jonathan Freedman and Chip Humphries of the Environmental Protection Agency, Region 10.

If either the Corps project manager or the applicant has any questions regarding this decision, please feel free to contact Marci Cook at (503) 808-4765 or via e-mail at: marci.e.cook@usace.army.mil.

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